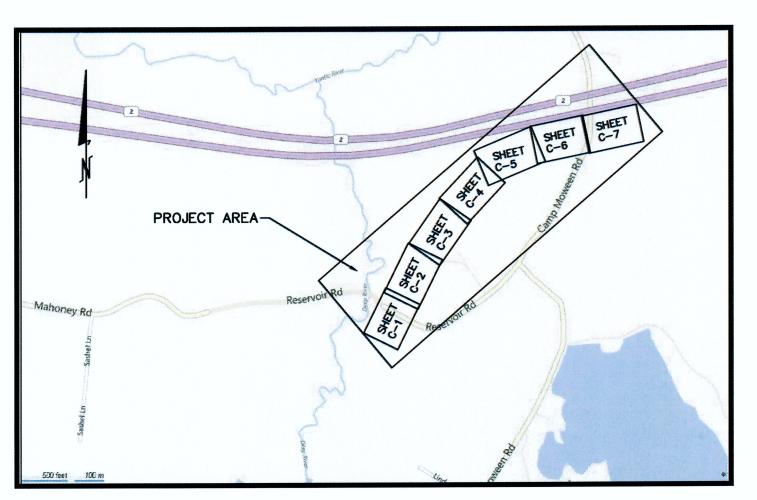
NORWICH PUBLIC UTILITIES

DEEP RIVER WATER TREATMENT PLANT TRANSMISSION MAIN REHABILITATION

DWSRF 2010-1040011C BID NO. 7435



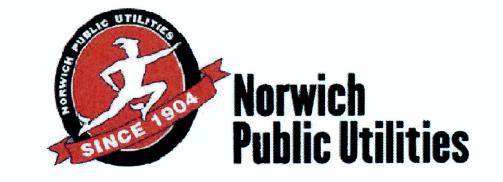
TRANSMISSION MAIN LOCUS MAP

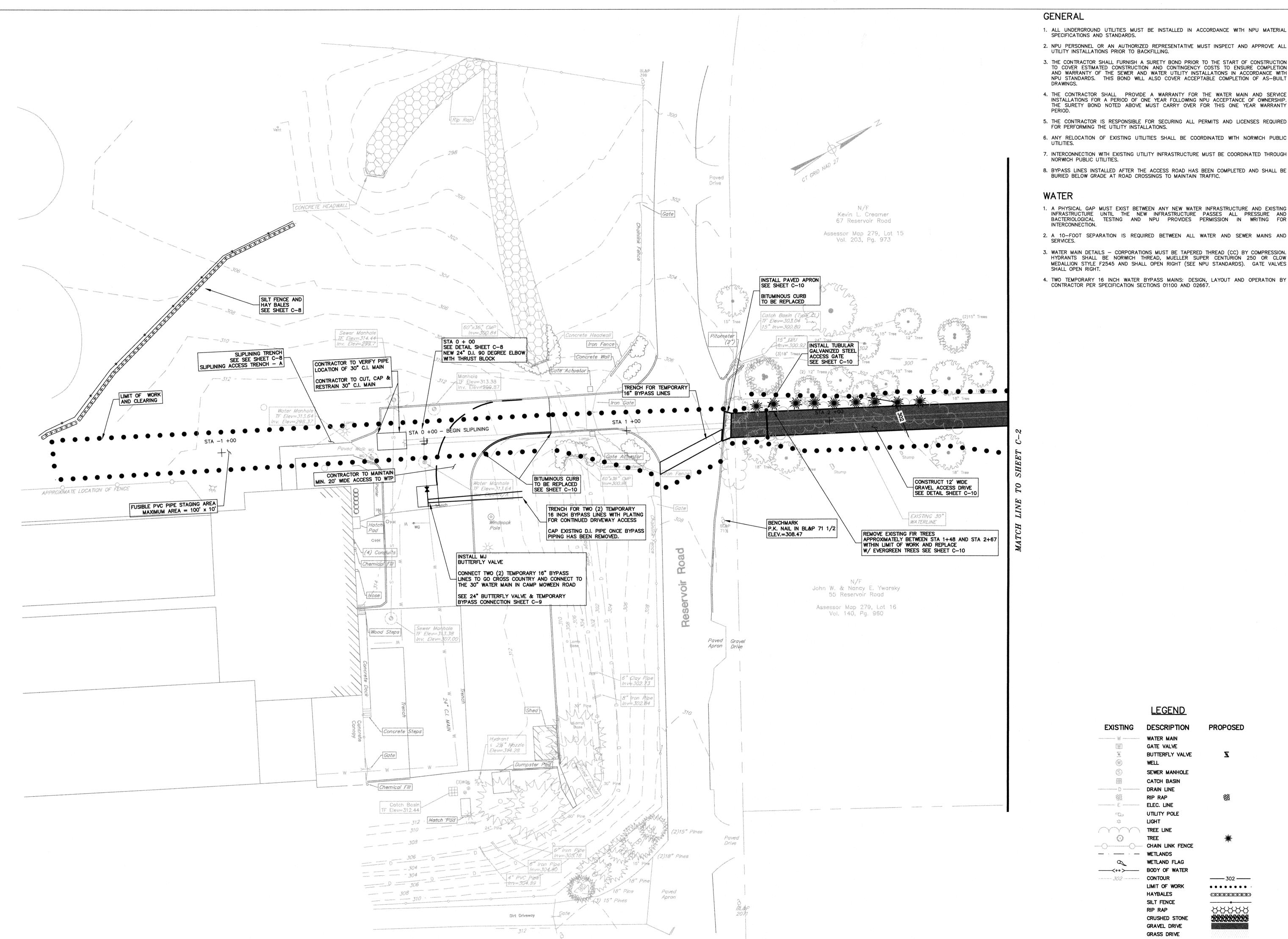




INDEX TO DRAWINGS

C-1 - PROPOSED PVC SLIP LINING DEEP RIVER WTP & RESERVOIR ROAD C-2 - PROPOSED SLIP LINING AND ACCESS DRIVE: STA 2+88 TO STA 8+99 C-3 - PROPOSED SLIP LINING AND ACCESS DRIVE: STA 8+99 TO STA 14+9 C-4 - PROPOSED SLIP LINING AND ACCESS DRIVE: STA 14+95 TO 20+57 C-5 - PROPOSED SLIP LINING AND ACCESS DRIVE: STA 20+57 TO 27+01 C-6 - PROPOSED SLIP LINING AND ACCESS DRIVE: STA 27+01 TO 32+81 C-7 - PROPOSED PVC SLIP LINING CAMP MOWEEN ROAD C-8 - SITE DETAILS (I) C-9 - SITE DETAILS (II) C-10- SITE DETAILS (III)





- 1. ALL UNDERGROUND UTILITIES MUST BE INSTALLED IN ACCORDANCE WITH NPU MATERIAL SPECIFICATIONS AND STANDARDS.
- 2. NPU PERSONNEL OR AN AUTHORIZED REPRESENTATIVE MUST INSPECT AND APPROVE ALL
- 3. THE CONTRACTOR SHALL FURNISH A SURETY BOND PRIOR TO THE START OF CONSTRUCTION TO COVER ESTIMATED CONSTRUCTION AND CONTINGENCY COSTS TO ENSURE COMPLETION AND WARRANTY OF THE SEWER AND WATER UTILITY INSTALLATIONS IN ACCORDANCE WITH
- 4. THE CONTRACTOR SHALL PROVIDE A WARRANTY FOR THE WATER MAIN AND SERVICE INSTALLATIONS FOR A PERIOD OF ONE YEAR FOLLOWING NPU ACCEPTANCE OF OWNERSHIP. THE SURETY BOND NOTED ABOVE MUST CARRY OVER FOR THIS ONE YEAR WARRANTY
- 5. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL PERMITS AND LICENSES REQUIRED
- 6. ANY RELOCATION OF EXISTING UTILITIES SHALL BE COORDINATED WITH NORWICH PUBLIC
- 7. INTERCONNECTION WITH EXISTING UTILITY INFRASTRUCTURE MUST BE COORDINATED THROUGH
- 8. BYPASS LINES INSTALLED AFTER THE ACCESS ROAD HAS BEEN COMPLETED AND SHALL BE BURIED BELOW GRADE AT ROAD CROSSINGS TO MAINTAIN TRAFFIC.
- 1. A PHYSICAL GAP MUST EXIST BETWEEN ANY NEW WATER INFRASTRUCTURE AND EXISTING INFRASTRUCTURE UNTIL THE NEW INFRASTRUCTURE PASSES ALL PRESSURE AND BACTERIOLOGICAL TESTING AND NPU PROVIDES PERMISSION IN WRITING FOR
- SLIP 2. A 10-FOOT SEPARATION IS REQUIRED BETWEEN ALL WATER AND SEWER MAINS AND
- 3. WATER MAIN DETAILS CORPORATIONS MUST BE TAPERED THREAD (CC) BY COMPRESSION. HYDRANTS SHALL BE NORWICH THREAD, MUELLER SUPER CENTÙRIÓN 250 OR CLOW MEDALLION STYLE F2545 AND SHALL OPEN RIGHT (SEE NPU STANDARDS). GATE VALVES
- 4. TWO TEMPORARY 16 INCH WATER BYPASS MAINS: DESIGN, LAYOUT AND OPERATION BY

	PROPOSED DVC SLI
AL CONTRACT PLANS	
4 & LEBANON REVIEW	DEEF KIVER WIF &
95% Drawings	KESEKVOIK KOAD
Description	THIS DOCUMENT IS THE PROPERTY OF TATA & HOWARD, INC. AND ITS REPRODUCTION OR MODIFICATION WITHOUT WRITTEN CONSENT IS PROHI

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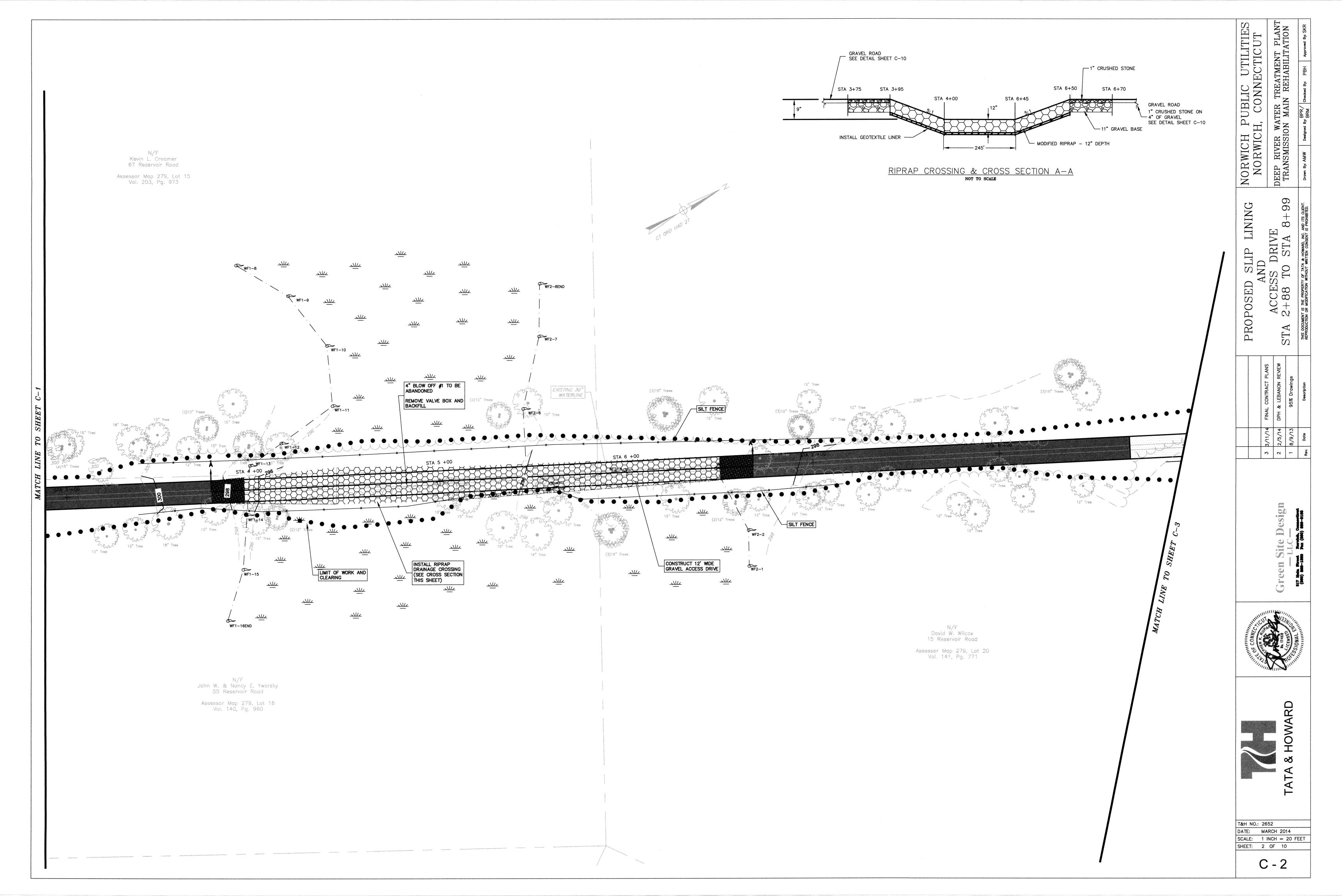
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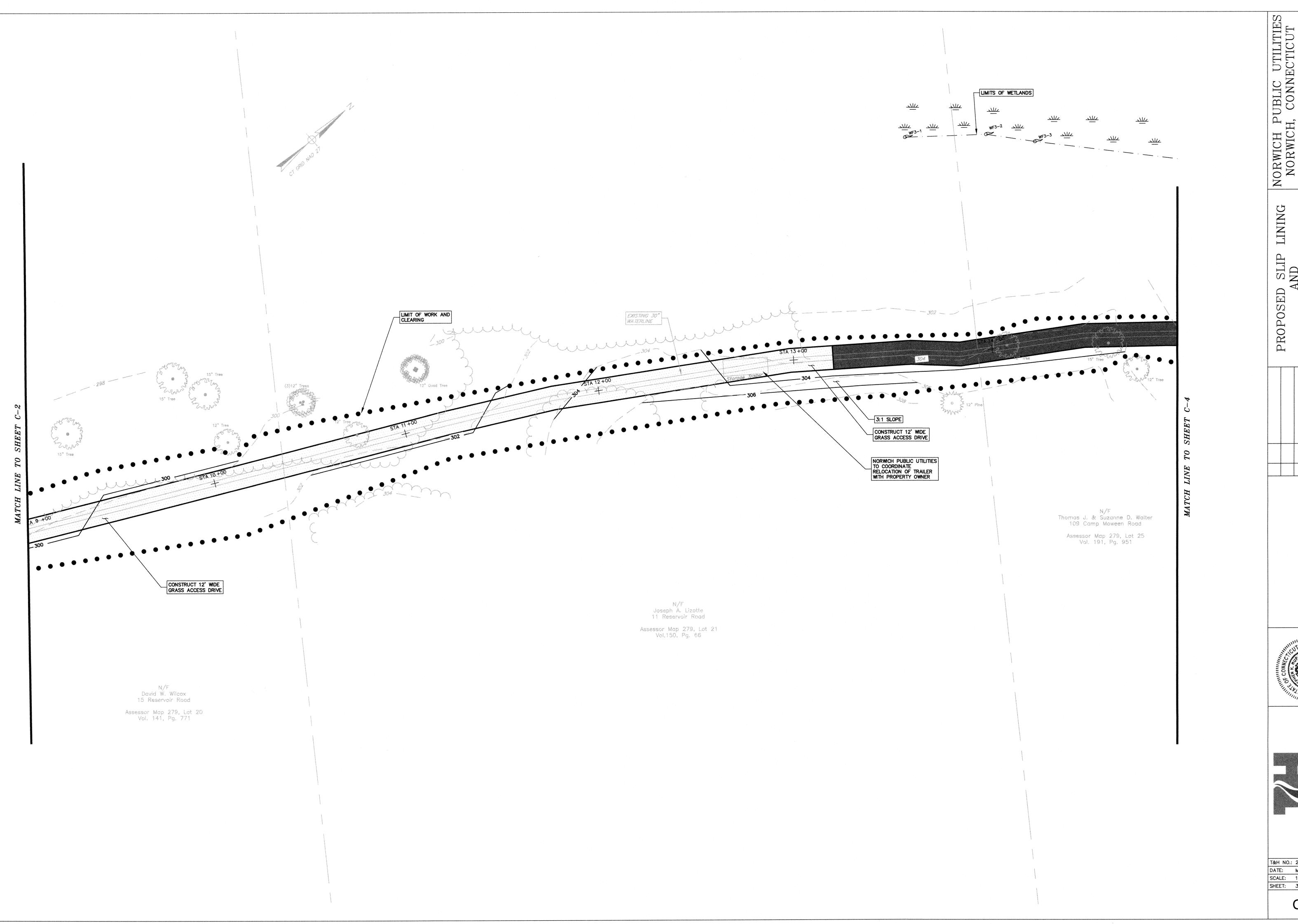
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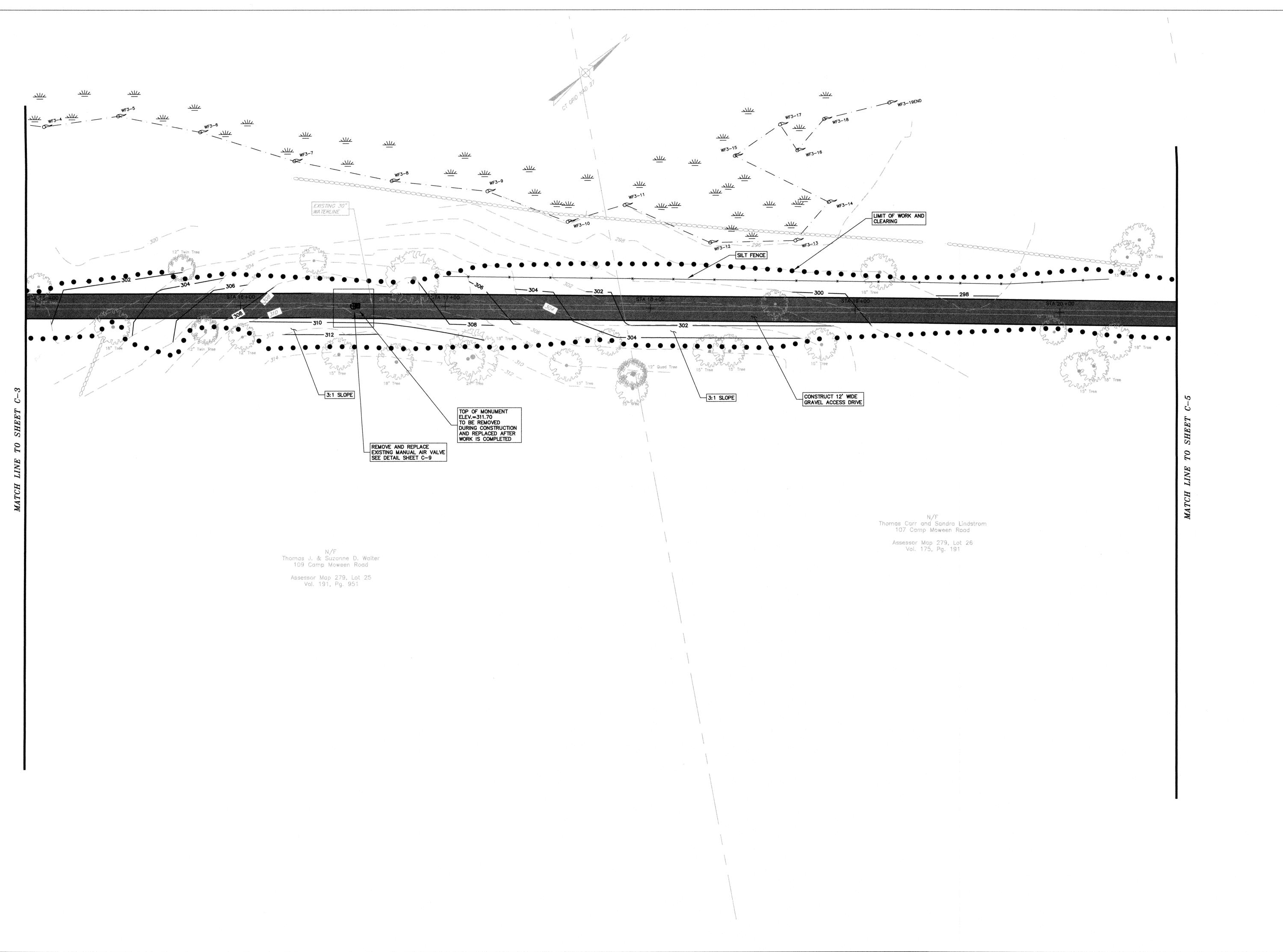
T&H NO.: 2652 DATE: MARCH 2014 SCALE: 1 INCH = 20 FEET SHEET: 1 OF 10





PROPOSED SLIP LIN
AND
ACCESS DRIVE
STA 8+99 TO STA 12

T&H NO.: 2652 DATE: MARCH 2014 SCALE: 1 INCH = 20 FEET SHEET: 3 OF 10

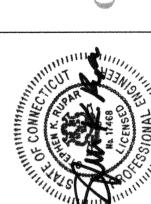


NORWICH PUBLIC UTILITIES NORWICH, CONNECTICUT

LINING

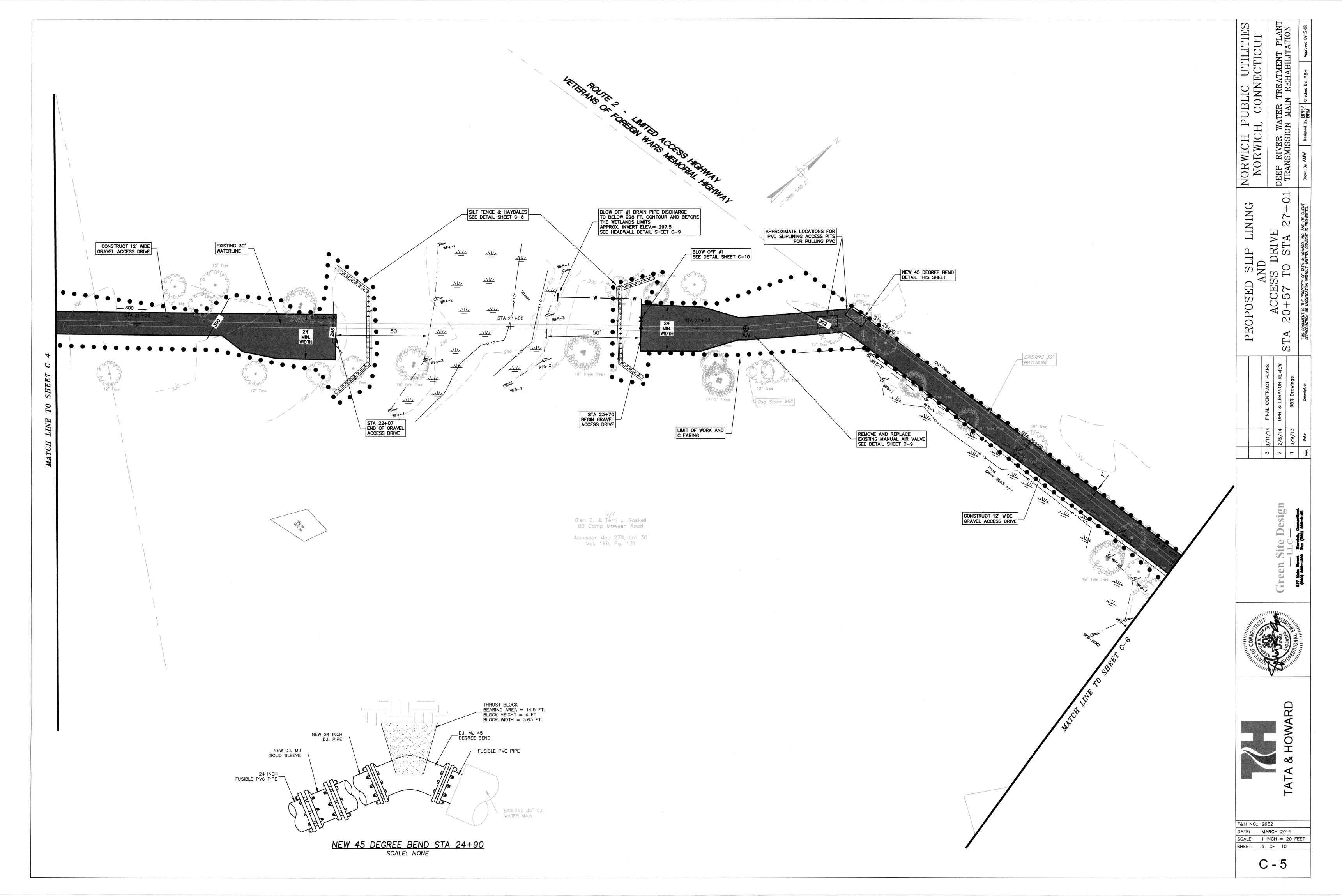
PROPOSED

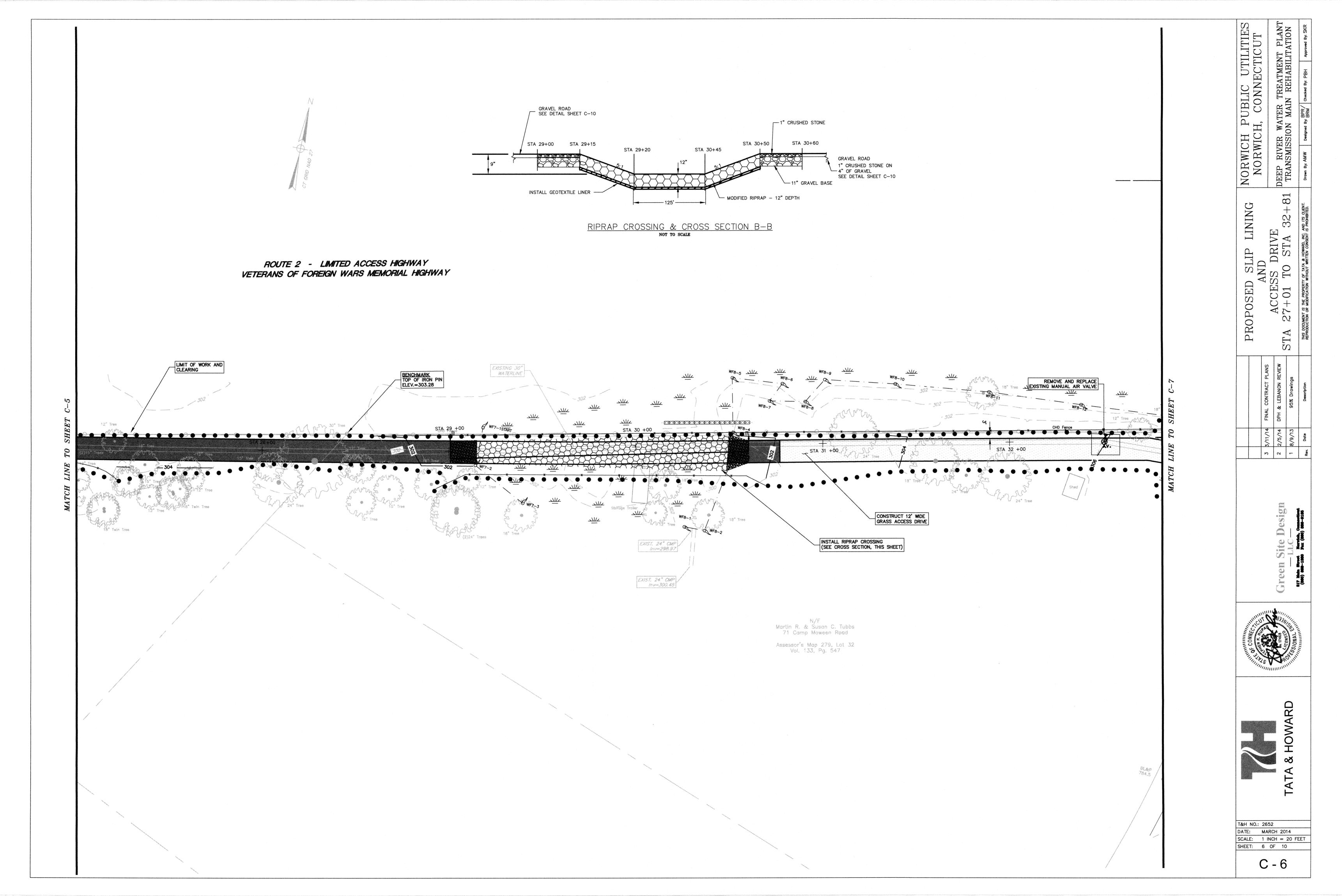
OPOSED SLIP LIN AND ACCESS DRIVE 14+95 TO STA 2

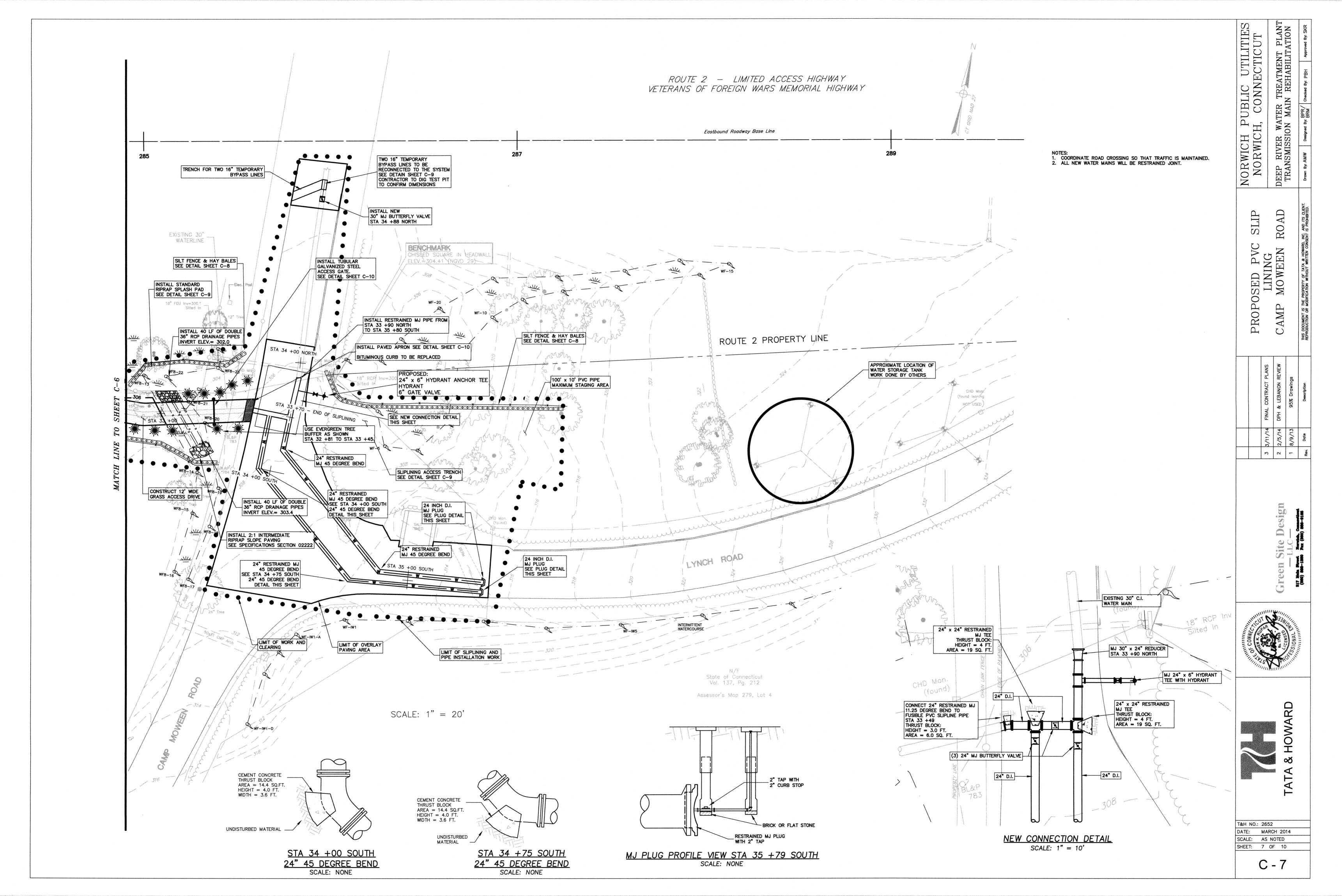


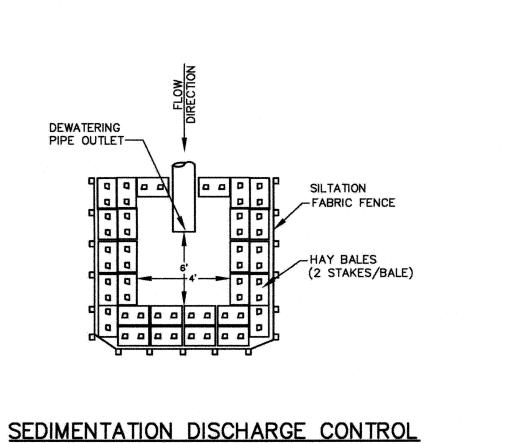
T&H NO.: 2652 DATE: MARCH 2014

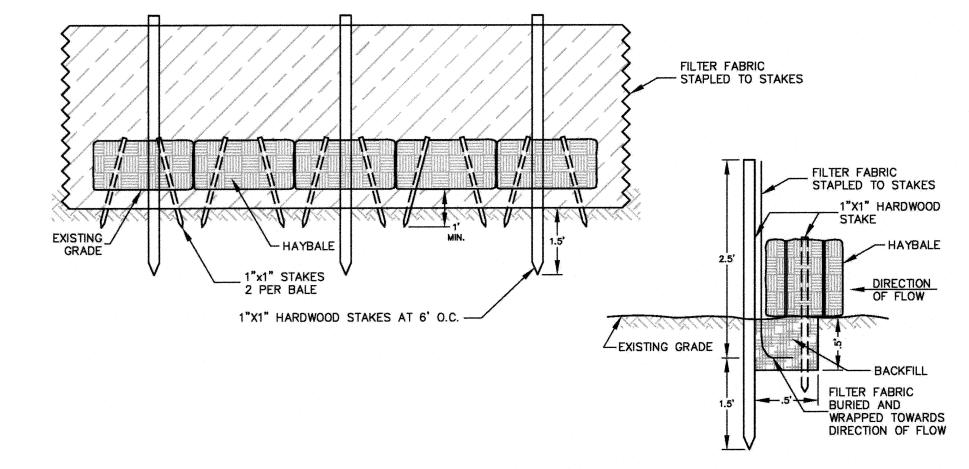
SCALE: 1 INCH = 20 FEET SHEET: 4 OF 10



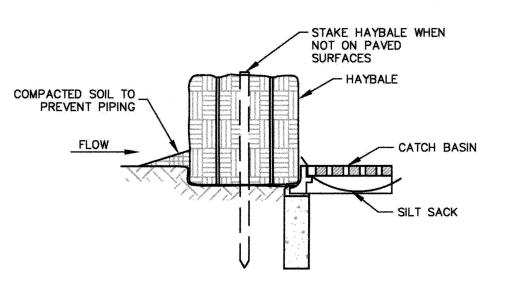








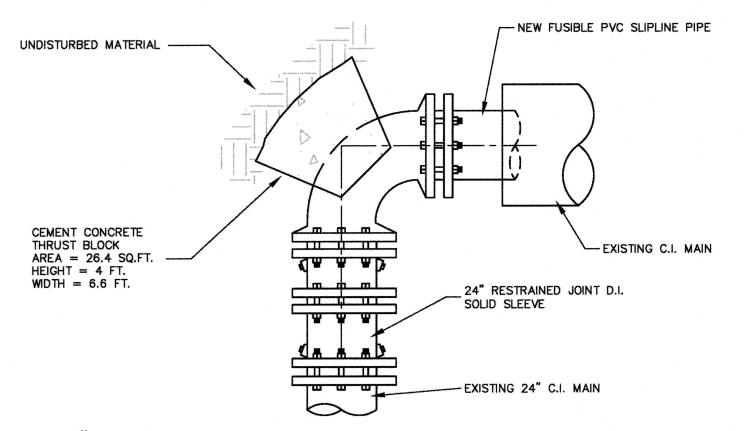


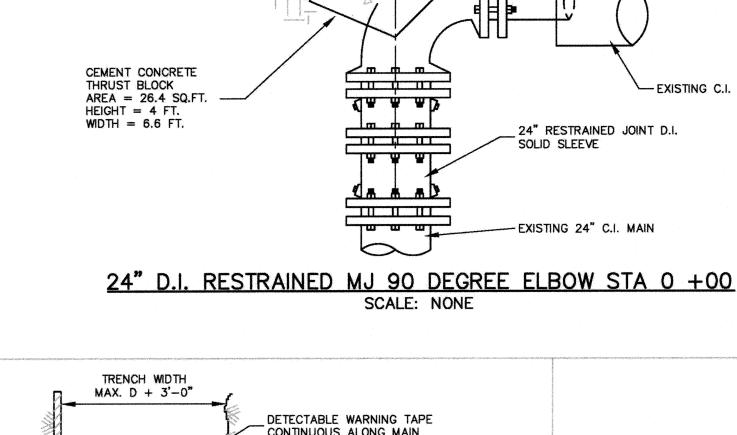


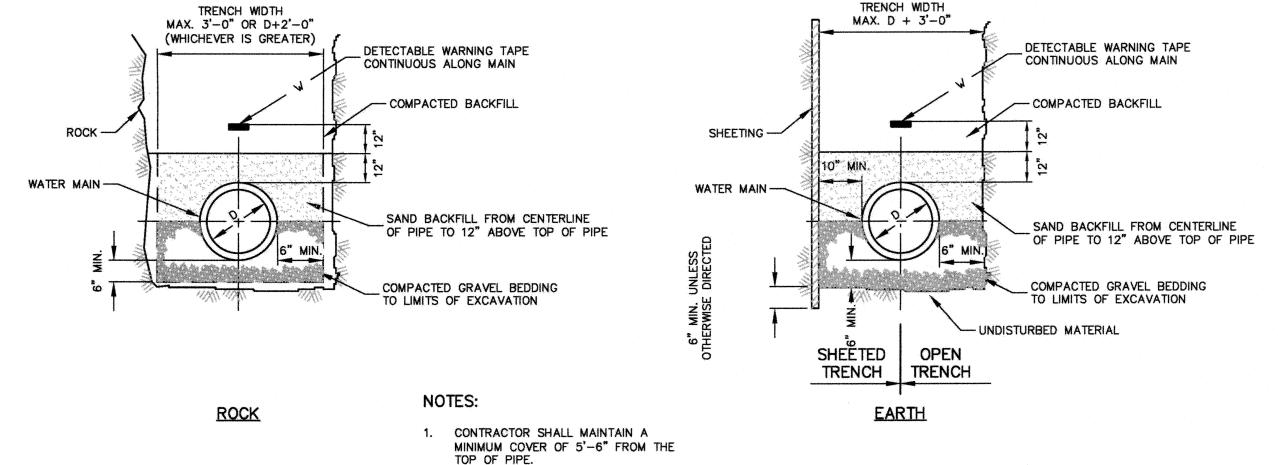
NOTE:

1. HAYBALES SHALL SURROUND PERIMETER OF C.B. AND SHALL BE ABUTTED TIGHTLY AGAINST ADJACENT

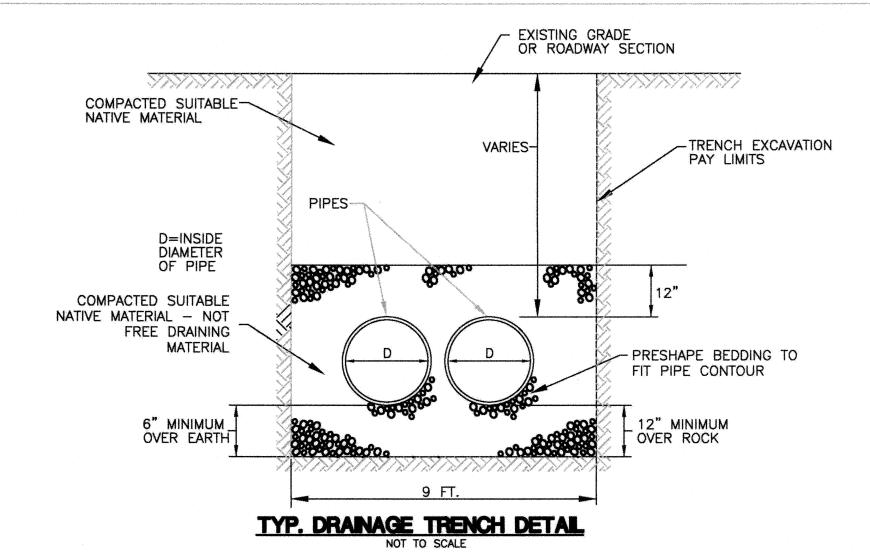
CATCH BASIN SILTATION BARRIER SCALE: NONE







TYPICAL WATER MAIN TRENCH SECTIONS SCALE: NONE



Pipe Type	DIPS
Nom. Dia.	24.00 in
Pipe OD	25.80 in
Bend Radius (R _B)	538.00 ft
Roller Height (Y ₃)	24.00 in
	2.00 ft
Grade to Host Pipe Invert	17.00 ft
Grade to FPVC™ Centerline	15.93 ft
Host Pipe OD	32.00 in
Host Pipe ID	30.00 in
Host Pipe Wall	1.00 in
Overall Length (L)	140.00 ft
Min. Tail Ditch Width (TDw)	36.00 in
	3.00 ft
Min. Tail Ditch Length (TD _L)	101.00 ft
Tail Ditch Depth (TD _D)	14.23 ft
	170.79 in
Pit Width (Pw)	72.00 in
	6.00 ft
Pit Length (P _L)	39.00 ft
Pit Depth (P _D)	18.00 ft
Lmax	48.00 ft
Distance - X	46.00 ft
Distance - Xint	23.00 ft

MANA DE COURTS DE MANAGE D Min. Tail Ditch Width (TDw) **→** 12" 12" → ▶ <u>PLAN</u> Min. Tail Ditch Len. (TD_L) Pit Length (P_L) Lmax Pipe Roller Ass'y Intermediate 3 minimum at Pipe Roller Ass'y Req'd Spacing Cut, Cap and Install Thrust Block Restraint on the Existing 30" C.I. Main **ELEVATION**

The calculations for the pit sizing shown are based on minimum requirements of the pipe product being selected above and do not take into consideration any soil bearing conditions, access requirements, required shoring, or project specific information, all of which should be considered and adjusted as necessary for each project

> SLIPLINING ACCESS TRENCH - A SCALE: NONE

CIVIL CONSTRUCTION NOTES

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS.

GROUND LINE AS SHOWN ON THESE PLANS IS BASED ON FIELD SURVEY.

3. CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG" AT 1-800-922-4455 AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

4. INFORMATION SHOWN ON THE DRAWINGS RELATING TO MATERIALS, CONDITIONS, AND/OR LOCATIONS OF EXISTING STRUCTURES AND UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING FIELD SURVEY, UTILITY

COMPANY AND TOWN RECORD MAPS AND DRAWINGS, AND IS NOT GUARANTEED ACCURATE OR COMPLETE. 5. THE CONTRACTOR SHALL EXECUTE TEST PITS AS NEEDED OR AS DIRECTED BY THE OWNER TO VERIFY EXISTING UTILITY INFORMATION AND LOCATIONS.

6. PASSAGE OF TRAFFIC ON ROADWAYS: ON SITE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PERFORM HIS OPERATIONS TO MINIMIZE DISRUPTIONS TO TRAFFIC WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL COORDINATE ALL MAINTENANCE AND PROTECTION OF TRAFFIC, TRAFFIC CONTROL, TEMPORARY SIGNING OR BARRICADES AND LANE CLOSURES WITH THE OWNER.

7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC AND TRAFFIC

ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER TO MATCH EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION PURPOSES AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT, ROADWAY, SIDEWALKS, ETC.. OUTSIDE OF THE WORK AREA AND SHALL REPAIR SUCH DAMAGE AT NO ADDITIONAL COST TO THE OWNER. 10. UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER

THAN EXISTED PRIOR TO CONSTRUCTION. 11. ALL STREET SIGNS, MAILBOXES, PLANTINGS, ORNAMENTAL OBJECTS, LIGHTS, LANDSCAPE, LANDSCAPE SHRUBBERY, ETC., SHALL BE PROTECTED FROM DAMAGE AND SHALL BE REPLACED IN THE SAME OR BETTER CONDITION BY THE CONTRACTOR IF DISTURBED OR DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION.

12. THE CONTRACTOR SHALL BE RESPONSIBLE RESETTING TO GRADE ALL FRAMES, GRATES, COVERS, VALVE BOXES, ACCESS COVERS, AND ALL OTHER ITEMS WHICH NORMALLY MUST HAVE A FIXED RELATION TO THE FINISHED GRADE. 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY AND PERMANENT SUPPORT OF ALL EXISTING UTILITY POLES IN AND ADJACENT TO THE CONSTRUCTION AREA AND SHALL COMPLY WITH ALL THE REQUIREMENTS AND SPECIAL DETAILS FOR THE SUPPORT OF UTILITIES REQUIRED BY UTILITY AGENCIES. ALL COSTS FOR TEMPORARILY SUPPORTING

UTILITY POLES DURING CONSTRUCTION SHALL BE INCLUDED IN OTHER ITEMS. 14. IF BLASTING IS PERFORMED A PRE-BLAST SURVEY WILL BE REQUIRED. ANY AND ALL BLASTING SHALL CONFORM TO THE REGULATIONS SET FORTH BY THE TOWN AND SHALL BE APPROVED BY THE APPROPRIATE CITY AGENCIES AND ADJACENT

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY AND STAKEOUT AS THEY NEED. SURVEY BASE INFORMATION AND LAYOUT WILL BE PROVIDED TO THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. 16. PERMANENT EPOXY RESIN PAVEMENT MARKINGS SHALL CONFORM WITH ARTICLE 12.10 OF THE DOT FORM 816

17. ALL WORK TO CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION FROM 816, DATED JULY 2010, AS REVISED.

EROSION CONTROL & SEDIMENTATION SEQENCE

1. PRIOR TO THE INSTALLATION OF ANY EROSION AND SEDIMENT CONTROL MEASURES, THE OWNER, THE ENGINEER, THE TOWN WETLAND AGENT AND CONTRACTOR SHALL MEET ON THE SITE.

2. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE. ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DETERMINED TO BE NECESSARY BY THE OWNER'S REPRESENTATIVE, OR THE TOWN WETLAND AGENT.

3. STAKE LIMITS OF CLEARING THE SEDIMENT AND EROSION CONTROL MEASURES, PRIOR TO SITE DISTURBANCE. CONSTRUCTION SHALL NOT BEGIN UNTIL SUCH TIME AS THE ENGINEER HAS REVIEWED AND APPROVED THE INSTALLATION OF THE SEDIMENTATION AND EROSION CONTROL MEASURES.

4. CONTRACTOR TO INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES AT LEAST WEEKLY AND AFTER EVERY STORM EVENT AND REPAIR AND MAINTAIN AS NECESSARY.

5. CLEARING AND GRUBBING OF THE AREA TO BE GRADED; TOPSOIL TO BE REMOVED AND STOCKPILED IN AN AREA AS SHOWN ON THE PLANS AS A CONSTRUCTION STAGING AREA, & SURROUNDED WITH SILT FENCE.

6. STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. ANY TRENCH DEWATERING WILL BE DONE IN ACCORDANCE WITH THE DETAIL PROVIDED AND THE 2002 CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

7. INSTALL CRUSHED STONE SURFACE. 8. TOPSOIL SHALL BE RE-APPLIED TO PROVIDE A MINIMUM DEPTH OF FOUR INCHES. 9. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES

SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED. 10. SEEDING SHOULD TAKE PLACE BETWEEN APRIL 1 AND JUNE 1 OR AUGUST 15 AND OCTOBER 1. 11. THE FOLLOWING SEEDING MIXTURES SHALL BE PROVIDED ON ALL DISTURBED AREAS:

KENTUCKY BLUE GRASS 100 LB's/AC CREEPING RED FESCUE 100 LB's/AC PERENNIAL RYEGRASS 25 LB's/AC

12. CLEAN OUT NEW & EXIST. CATCH BASINS & OUTLETS. 13. UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. 14. REMOVE TEMPORARY E&S UPON VEGETATIVE STABILIZATION.

DEWATERING PLAN

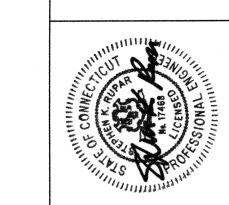
EMPLOYED IF NECESSARY

IF DEWATERING IS NECESSARY DURING CONSTRUCTION, A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS FOLLOWS:

A. THE PUMP INLET WILL BE WRAPPED IN FILTER FABRIC AND PLACED IN CRUSHED STONE WITHIN THE TRENCH. B. THE PUMP OUTLET WILL DISCHARGE TO THE DEWATERING ENCLOSURE PER THE DETAIL FOR DEWATERING

C. THE DISCHARGE FROM THE DEWATERING ENCLOSURE WILL BE MONITORED AND ADDITIONAL MEASURES

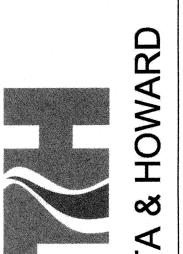
Slipline Installation - Pipe Supported on Rollers Overall Length (L) - Fusible PVC™ Pipe



n 2 -

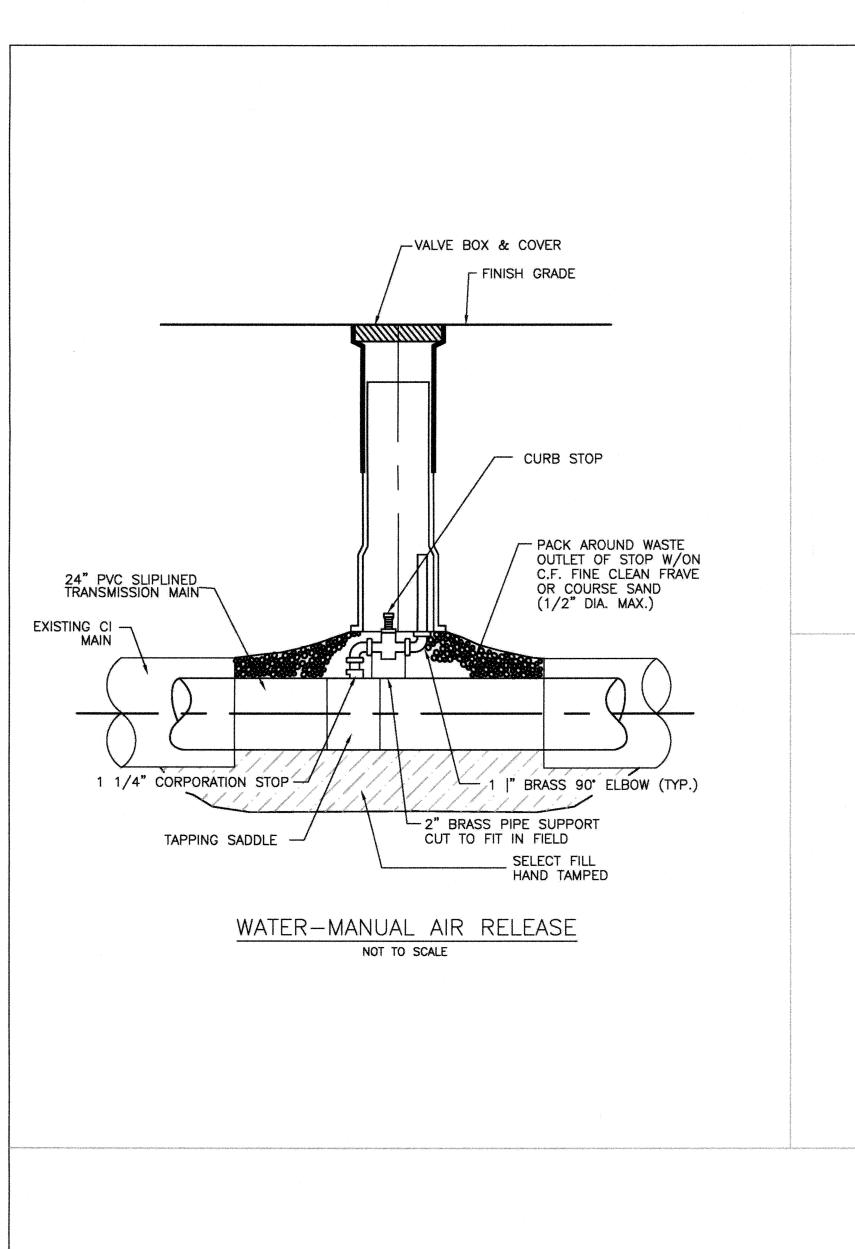
DEEP RIVER WATER TREATMENT PLAN TRANSMISSION MAIN REHABILITATION

OR NO



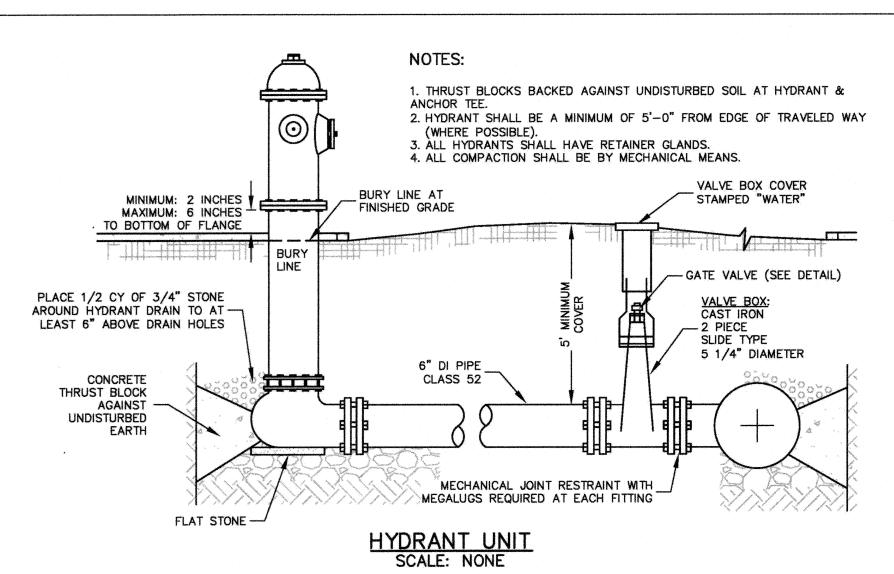
T&H NO.: 2652

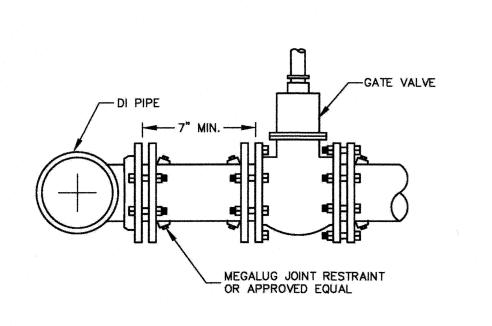
DATE: MARCH 2014 SCALE: NONE SHEET: 8 OF 10



Distance - Yint

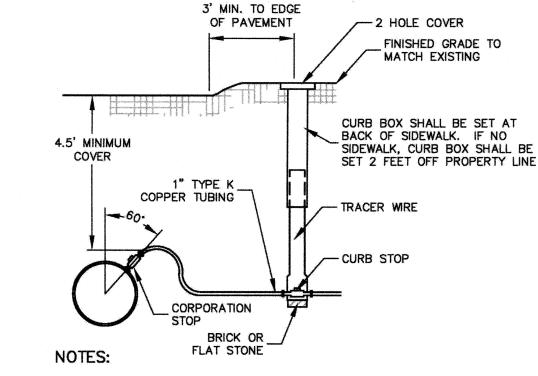
18.00 in





MECHANICAL JOINT RESTRAINT SCALE: NONE

-36" DRAINAGE PIPES



. SERVICES 1-INCH AND GREATER IN D.I. AND C.I. MAINS WITH A DIAMETER OF 12-INCHES OR GREATER SHALL BE DIRECT TAP.
2. SERVICES TO BE INSTALLED UNDER PAVEMENT ARE TO BE INSTALLED USING A TRENCHLESS METHOD. USE A PNEUMATIC DRIVE DEVICE OR APPROVED EQUIVALENT METHOD.

SERVICE CONNECTION (COPPER) SCALE: NONE

DIMENSIONS

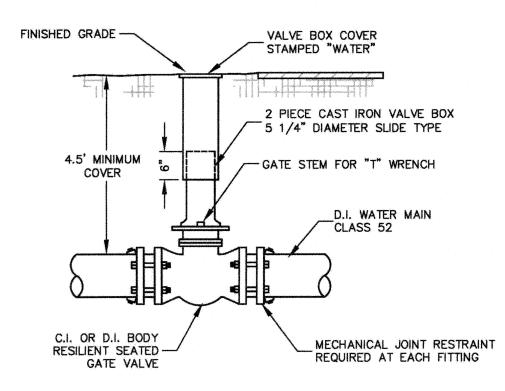
S = 8 INCHES

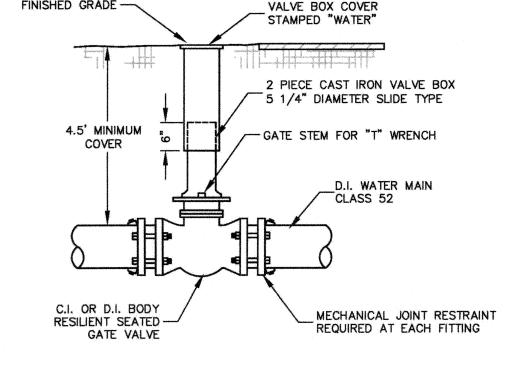
H = 48 INCHES (4 FT.)

B = 12 INCHES (1 FT.)

D = 6 INCHES (0.5 FT.)

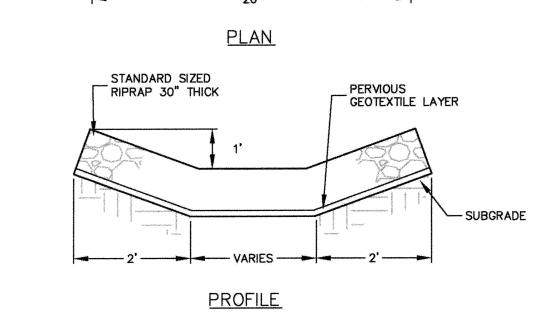
L = 30 INCHES (2.5 FT.)





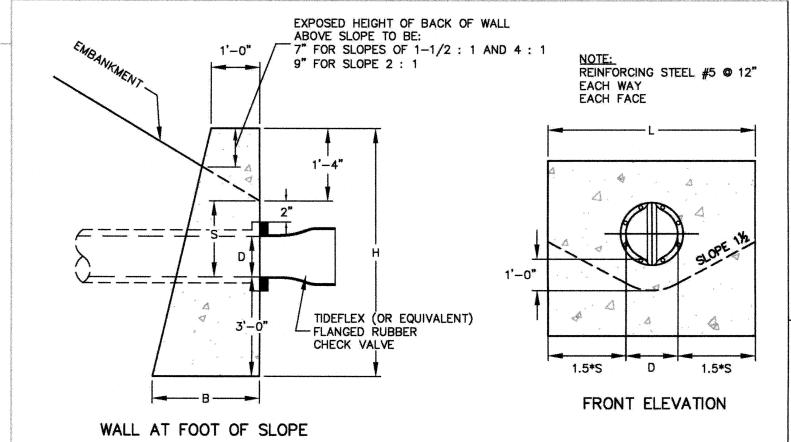
GATE VALVE

SCALE: NONE



SCALE: NONE





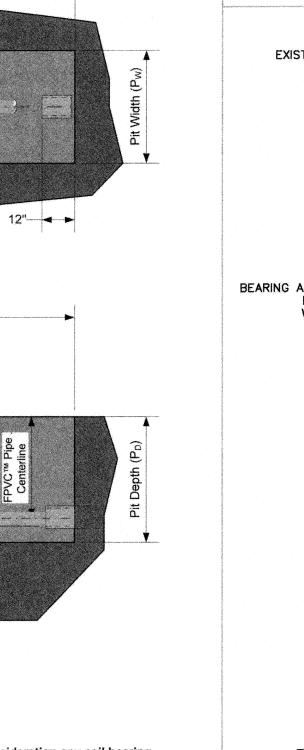
Δĺ	HEIGHT	ΛF	ENDWALL	

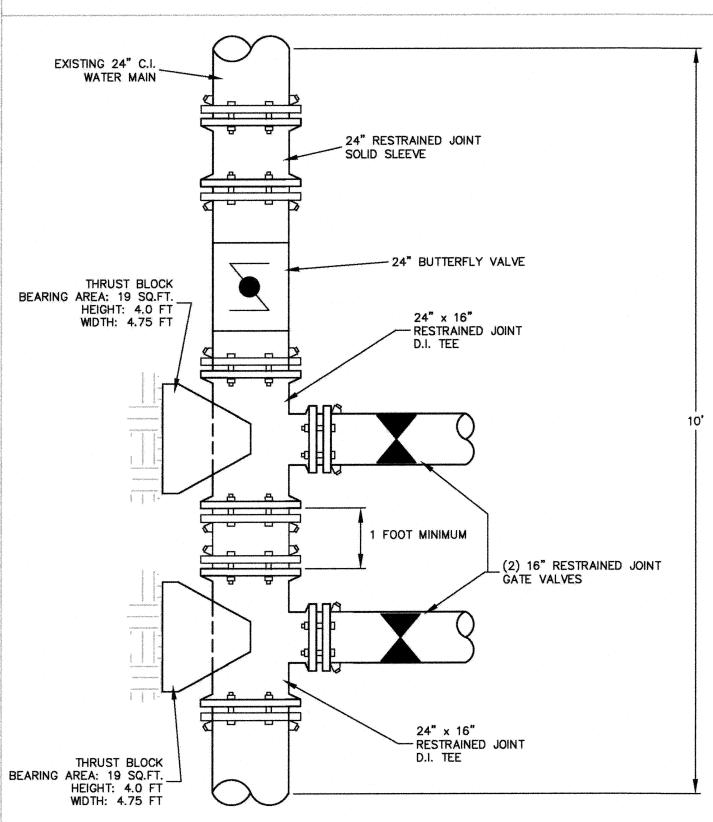
H = TOTAL HEIGHT OF ENDWALL B = BASE

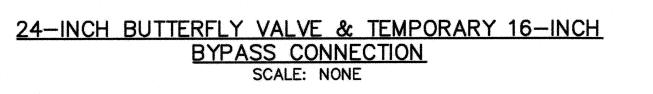
D = INSIDE DIAMETER OF PIPE S = HEIGHT OF SLOPE ABOVE INVERT

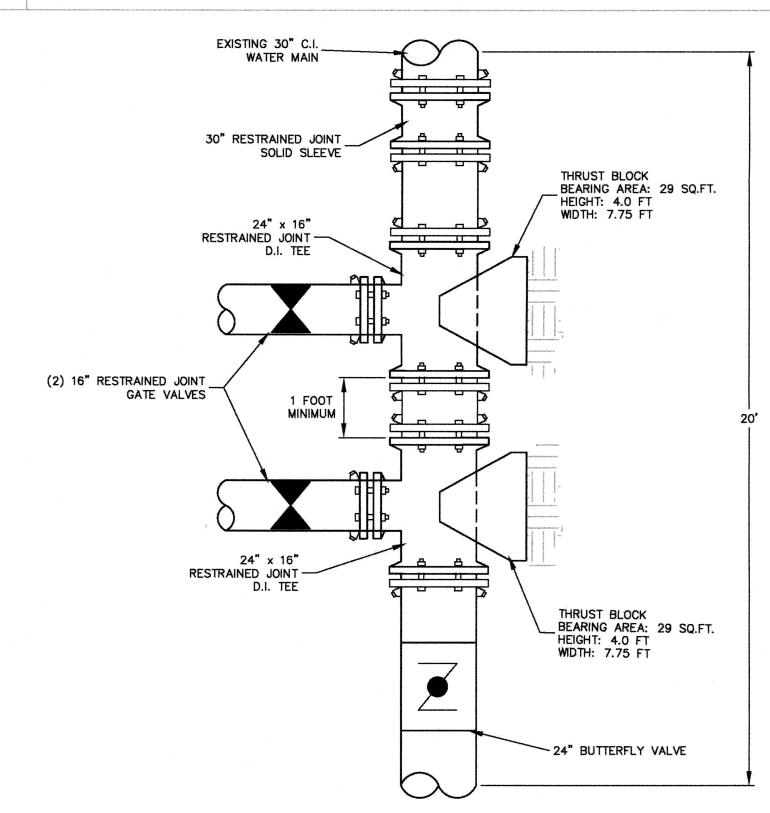
AT FACE OF WALL, MINIMUM = D+2 ALL EDGES OF EXPOSED SURFACES TO BE

HEADWALL DETAIL SCALE: NONE









30-INCH BUTTERFLY VALVE & TEMPORARY 16-INCH **BYPASS CONNECTION** SCALE: NONE

DEEP RIVER WATER TREATMENT PLANT TRANSMISSION MAIN REHABILITATION

OUBLIC UTILITIES CONNECTICUT

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T&H NO.: 2652 DATE: MARCH 2014 SCALE: NONE SHEET: 9 OF 10

C - 9

Overall Length (L) DIPS Pipe Type Fusible PVC™ Pipe Nom. Dia. Pipe OD Bend Radius (R_B) 538.00 ft 24.00 ir Roller Height (Y₃) the same a superior to the same as th **Grade to Host Pipe Invert** 6.00 f 4.93 f Grade to FPVC™ Centerline Min. Tail Ditch Width (TDw) -**← →** 12" 32.00 in Host Pipe OD 30.00 in Host Pipe ID **Host Pipe Wall** Overall Length (L) 70.00 ft Min. Tail Ditch Len. (TD_L) Pit Length (PL) Lmax Min. Tail Ditch Width (TDw) 36.00 in Pipe Roller Ass'y 3.00 ft Intermediate - 3 minimum at Pipe Roller Ass'y Req'd Spacing Min. Tail Ditch Length (TDL) 31.00 ft 3.23 ft Tail Ditch Depth (TD_D) 38.79 in Pit Width (Pw) 72.00 in 6.00 ft Pit Length (PL) 39.00 ft Pit Depth (P_D) 7.00 ft 48.00 ft Lmax Distance - X 46.00 ft Distance - Xint 23.00 ft Cap Existing _ 30" C.I. Main

> The calculations for the pit sizing shown are based on minimum requirements of the pipe product being selected above and do not take into consideration any soil bearing conditions, access requirements, required shoring, or project specific information, all of which should be considered and adjusted as necessary for each project.

ELEVATION

SLIPLINING ACCESS TRENCH - B SCALE: NONE

Slipline Installation - Pipe Supported on Rollers

